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TRIP REPORT

Literature Review: Equity in the Health Sector in Developing Countries with Lessons Learned for Sub-Saharan Africa

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Literature Review:
Equity in the Health Sector
in Developing Countries

With Lessons Learned for Sub-Saharan Africa

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Acronyms

BASICS	Basic Support for Institutionalizing Child Survival
BI	Bamako Initiative
CAM	Carte d'Assurance Maladie (Burundi)
CAS	Caracterizacion Socio Economica (Chile)
GNP	Gross National Product
LSMS	Living Standards Measurement Surveys
MCH	Maternal and Child Health
MOH	Ministry of Health
NGOs	Non-Governmental Organizations
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WDR	World Development Report
WHO	World Health Organization

Executive Summary

This literature review provides background information for a research study concerning programs to increase equity in the health sector. The BASICS Project (Basic Support for Institutionalizing Child Survival) is conducting the study, with financing from the Africa Bureau of the United States Agency for International Development (USAID).

Though this literature review focuses on programs and examples pertinent for interventions to increase equity the health sector in sub-Saharan Africa; there is also considerable discussion of equity in other regions of the world. Access to and utilization of health care are inequitable in many developing countries, and are particularly so in sub-Saharan Africa -- approximately half of the region's population does not have regular access to modern medical facilities.

Many countries have recently initiated user fees for health services, or have raised existing fees. Cost recovery can be progressive under the right circumstances -- if the revenue generated from the fees is retained and used by the charging facilities, and if quality of care improves as a result. However, a wide range of studies have found that price increases lower utilization of health services by the poor more than utilization by the rich. Policies for discriminatory pricing and for protecting the poor are clearly necessary in the context of widespread user fees for health services.

The document discusses theoretical concepts underlying programs to increase equity, and describes different types of programs. Non-targeted approaches to promote equity include general subsidization of health care, risk-sharing, and improvements in allocative and technical efficiency in health systems. Untargeted subsidies are common in sub-Saharan Africa, and remain a recommended policy option for a range of preventive services with positive externalities. Formal health insurance covers only a small percentage of African populations; the development of operable risk-sharing schemes is a priority.

Experience shows that targeted programs can be successful in a wide variety of developing country settings. Characteristic targeting by nutritional status has proven to be effective in Latin America, and has been more efficient than general food subsidies. Combining targeting for nutritional supplements and preventive health services encourages the poorest to obtain basic preventive health care.

Successful targeting depends on both high coverage of the target population and low levels of leakage to non-eligible individuals. The administrative costs of targeting should be modest in comparison with the value of the benefits received by those targeted. Experience has shown that administrative costs of programs with moderately good incidence need not be excessively high.

In general, targeted interventions in sub-Saharan Africa have been compromised by a variety of difficulties, including excessive leakage, overly subjective exemption criteria, informal identification and verification procedures, and excessive costs. Limitations in institutional and administrative capacity underlie each of these problems. As a result, several countries are experimenting with community-level approaches to improving equity. Non-governmental health providers also generally provide waivers to the poor.

Political support for measures to promote equity is essential. In general, the poor have little political influence; there has often been a difference between policies for equity and action. In developing policy, it is important to recognize the political, social, and cultural factors which are likely to influence both the policy and its outcomes.

I. Background

A. The Importance of Equity in the Health Sector

1. Poverty and Its Effects on Health Status. The 1990 World Development Report focused on poverty, defining it as "the inability the attain a minimal standard of living."[1] Poverty is by definition a relative measure as reflected by the following definition: "Poverty can be said to exist in a given society when one or more persons do not attain a level of material well-being deemed to constitute a reasonable minimum by the standards of that society."[2] Using World Bank definitions, poverty is widespread in the developing world, particularly in sub-Saharan Africa. The absolute number of people in poverty in sub-Saharan Africa increased during the 1965-1985 period.[3] As shown in Table 1, the 1990 WDR projects that the absolute numbers of poor in sub-Saharan Africa will continue to increase in the 1985-2000 time period, essentially because economic development cannot keep up with population growth.

Table 1. Poverty in 2000, by Developing Region.

Region	Incidence of poverty		Number of poor (millions)	
	1985	2000	1985	2000
Sub-Saharan Africa	46.8	43.1	180	265
East Asia	20.4	4.0	280	70
South Asia	50.9	26.0	525	365
Latin America and the Caribbean	19.1	11.4	75	60

Note: Incidence of poverty defined as the share of the population below the poverty line ($370 per capita income in 1990).
Source: World Bank, 1990, p. 139.

Without question, poverty contributes directly to large scale inequalities in health status. Across countries, variations in health outcomes are in close correlation with differences in

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1 World Bank, 1990, p. 26.

2 Ravallion, 1992, p. 4.

3 Konan, 1991, p. 8.

gross national product.[4] Within countries, the poor generally have much worse access to health care than those better-off.[5]

2. The Extent of Inequity in the Health Sector. Access to and utilization of health services are inequitable throughout the developing world, and the inequities are particularly glaring in sub-Saharan Africa. The poor have generally not benefitted proportionately from the expansion of health services. Grosh (1994) suggests that public health systems can have a positive effect on equity if the poor have access to public care and the better-off population uses alternative sources of private care on a large scale. However, in most developing countries, the well-off still consume a disproportionately large share of public health services. In Indonesia in 1990, only 12 percent of public spending for health was for services consumed by the poorest 20 percent of households -- while the wealthiest 20 percent consumed 29 percent of the government subsidy in the health sector.[6] Table 2, on the next page, shows the distribution of total health care consumption in selected developing countries.

Underlying this inequitable distribution are difficult problems of access to care, and the cost of extending government services to geographically isolated poor populations.[7] In many developing countries, there remains a strong bias against rural populations in the allocation of public health resources and services.[8] A review of the health care sector in four countries of West Africa concludes that "the existing pattern of health-care expenditure is extremely

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4 Baker and van der Gaag, 1993, p. 388. There are notable exceptions to this pattern -- including China, Sri Lanka, Costa Rica, and the state of Kerala in India, all of which have strong health status indicators at relatively low levels of per capita GNP (World Bank, 1993b, 30).

5 World Bank, 1993a, p. 68. The 1993 WDR, *Investing in Health*, points out the disparities in health status among ethnic groups in Africa. In Kenya, the probability of dying before age two varies among ethnic groups -- from 7.4% to 19.7% for the most disadvantaged group. In Cameroon, rates among ethnic groups vary from 11.6% to 20.5%.

6 World Bank, 1993a, p. 69-70. Malaysia and Costa Rica are exceptions to this generally regressive pattern of public health service provision.

7 Jimenez, 1987, p. 4. Grosh (1994, 148) points out that, in Bolivia, the World Bank has decided to target health services to peri-urban poor populations rather than the rural poor because of the greater cost of reaching the latter group.

8 The 1990 WDR cites the example of Senegal, where 70% the country's physicians and pharmacists are concentrated in the urban Dakar-Cap Vert region. Sixty percent of midwives and 40% of nurses are also in this region, where less than 30% of the population live (World Bank, 1990, 78). In Zimbabwe in 1987, half of the Ministry of Health facility-based "patient budget" was spent at tertiary care facilities. Thirty-six percent of this budget was spent at just four central hospitals located in Harare and Bulawayo (World Bank, 1992).

Table 2. Percentage of Total Consumption by Quintile.

Country	Quintiles				
	1	2	3	4	5
Côte d'Ivoire -- rural	8	12	17	23	40
Côte d'Ivoire -- urban	6	10	14	21	49
Ghana -- rural	7	11	16	22	44
Ghana -- urban	7	12	16	21	44
Jamaica -- rural	6	10	14	21	49
Jamaica -- urban	6	11	15	22	46
Peru -- rural	6	10	15	21	48
Peru -- urban	6	9	14	21	50
Bolivia -- urban	7	9	14	20	50

Source: Baker and van der Gaag, 1993, 381, adapted from data from Living Standards Measurement Surveys, 1985-1990.

inequitable in all four countries."[9] Approximately half of sub-Saharan Africa's population does not have regular access to modern medical facilities; from 30 to 80 percent of government health expenditures are absorbed by urban-based hospital care in different countries.[10]

B. Defining and Measuring Equity

Available literature provides many definitions of equity in the context of health services. Definitions vary by outcomes -- equity can be measured using the concepts of expenditure, distribution of resources, access, utilization, and health status.[11] Musgrove (1986) provides a

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9 Vogel, 1988. The four countries are Senegal, Mali, Côte d'Ivoire, and Ghana. In Côte d'Ivoire, although 39% of the population live in urban areas, 80% of public health expenditures were in urban areas (p. 26 -- data from 1984-85).

10 World Bank, 1993b, p.2.

11 Menzel (1983) provides an extensive discussion of definitions for, and ethical principles underlying, equity.

comprehensive discussion of different approaches to measuring equity, pointing out that equity is too complex a topic to be reduced to a single indicator. He emphasizes the importance of differences among individuals or groups in terms of needs and the ability to obtain health care.[12]

Equity in expenditures depends on both ability to pay and need. "The distribution of health care expenditure should be less unequal than the distribution of income ... there should be a net subsidy (expenditure minus tax contributions) to population groups with low incomes and a net contribution by groups with high incomes."[13] One indicator for measuring equity in spending is expenditure per person needing assistance.

Statistics concerning geographic distribution of health-related resources provide readily measurable indicators of equity, but must be interpreted with care. In comparing the number of physicians per region, for example, it is important to know who actually consults the physicians, and the incidence and prevalence of different health problems by region -- in other words, the extent to which resources allocated match differing needs (including morbidity patterns and perceived needs).[14]

Appropriate allocation of resources for given health needs increases access. Willis (1993) defines access as "the probability that someone of a given health status will seek and receive health care (assuming uniform quality of care)."[15] Gilson (1988) suggests a definition of equity focusing on equal utilization for equal need, which incorporates the concept of equal access. In discussing financial barriers to accessing health care, several authors suggest that "ability" to pay for care, based on strict interpretation of households' income level, is too narrow a definition to use in determining pricing structures. An alternative concept is "willingness" to pay, which reflects both the ability and the desire of individuals and

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12 Musgrove (1986, p. 325) notes that if a health system is equitable, probabilities will be equal across population groups for given health problems -- including: (1) the probability of needing health care; (2) the probability of receiving treatment, given the need for it; (3) the probability of being cured by treatment; and (4) the probability of recovering without treatment.

13 Musgrove, 1986, p. 334.

14 Musgrove, 1986, p. 328.

15 Willis, 1993, p. 15. Willis provides a thorough discussion of the rationale for government intervention to increase access (pp. 16-17), and of how to define a fair distribution of health services (pp. 22-25).

households to pay for care, given other basic needs and financial demands which they may face.[16]

An important difference exists between equity in the distribution of public health services and equity in the distribution of all health services.[17] Since the latter includes private care, inequities expressed as distribution of all services may well be more extreme than if measured as the distribution of government services. Several authors also point out that the determination of equity in the distribution of government health services should ideally be considered in the context of the tax system -- if a tax system is highly progressive, the poor will tend to benefit disproportionately more than the wealthy from public health (and other public) services.[18] The poor benefit when public services are financed through tax revenues, rather than price revenues.[19]

The determination of equity can vary depending on the method of defining different groups in society. A division of groups along socio-economic lines may provide a different picture of equity than divisions by geographic or ethnic group.[20] Within groups, defining beneficiaries of health services in terms of households can provide a different distribution of benefits than treating beneficiaries as individuals. Large household size among poorer families may underestimate inequities in access to care.[21]

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16 Gertler and van der Gaag, 1990, p. 58. Waddington and Enyimayew (1989) discuss affordability as opposed to ability to pay.

17 Willis, 1993, p. 20.

18 Vogel (1988) provides a definition of equity in terms of "equal financial and physical access for equal need, when the tax system is proportional to income" (p. 173). Similarly, Musgrove (1986, p. 332) suggests two important elements in discussing equity in terms of costs: (1) equality of expenditure across population groups, and (2) the relation between the cost of providing health services and the contributions of different groups to the cost (either through payment for services or through taxation). Baker and van der Gaag (1993, p. 389) suggest that, when most health services are provided by the government, a knowledge of the incidence of the tax system is important for determining equity.

19 Jimenez, 1987, p. 4.

20 Musgrove, 1986, p. 327.

21 In addition, if wealthier families are using private and higher quality sources of care, the fact that the poor are receiving a high percentage of government services may mask inequities in terms of quality of care received (Grosh, 1994, p. 134).

C. Equity in the Context of User Fees for Health Services

Many developing countries have recently established or increased fees for public health services. These actions are motivated by fiscal constraints and arguments for greater efficiency in the health sector. The World Bank document *Financing Health Services in Developing Countries: An Agenda for Reform* lays out these arguments, stressing the difference between health services that are "public goods" (which have positive externalities not captured in individuals' willingness to pay), and those services that benefit only the receiving individual. The World Bank argues that user-fees for the latter type of services will lead to more efficient consumption of those services, and will "increase the public resources available for the types of health services that are public goods; these include currently underfunded health programs such as immunizations, control of vector-borne diseases, sanitary waste disposal, health education, and, in some circumstances prenatal and maternal care, including family planning."[22]

This argument holds intuitive appeal for equity -- "The poor should be the major beneficiaries of expanding resources for and improved efficiency in the government sector."[23] However, in practice it is difficult for pricing policy to discriminate between public and non-public goods, and increased revenues from fees are not necessarily allocated to services for the poor.

Since the widespread implementation of user fees in sub-Saharan Africa, a wide range of studies have found the fees to lower utilization by the poor more than utilization by the rich. A study of utilization patterns in Côte d'Ivoire and Peru found that the elasticity of demand for health care is closely related to income levels; the poorest quintile has more elastic demand than those better-off and will lower its utilization accordingly more in the face of price increases.[24]

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[22] Akin *et al.*, 1987. In an earlier World Bank document, de Ferranti states that "strategies favoring public provision of services at little or no fee to users and with little encouragement of risk-sharing have been widely unsuccessful" (de Ferranti, 1985, p. xiv).

[23] Akin *et al.*, 1987.

[24] Gertler *et al.*, 1987; Gertler and van der Gaag, 1990, p. 121 -- data from LSMS. The willingness of the poor to pay for health care in these two countries is so low that they are effectively being priced out of the market even by fees that are just a fraction of the marginal cost -- implying that subsidies are necessary if the poor are to have access to care. Gertler and van der Gaag suggest that health expenditures should not exceed 2-3% of the household non-food budget (p. 121.)

A review of the effects of user fees by Creese (1991) concludes that they have had negative effects for equity in terms of access and differences between socioeconomic groups. McPake (1993) also finds reduced utilization caused by user fees.[25] A study completed in the Volta Region of Ghana found that, following the establishment of user fees in 1985, utilization in rural areas fell to one-half of previous levels and did not subsequently recover. Utilization by those aged less than 15 or more than 45 decreased proportionately more than for the rest of the population.[26] Likewise, a study in Burkina Faso found that while overall demand for health care is inelastic (elasticity of -0.79), elasticity was substantially greater for infants (-3.6) and children (-1.7), and for the lowest income quartile (-1.4).[27]

User fees have been found to improve equity if the revenue generated from the fees is retained and used by the charging facilities, and if quality of care improves as a result. A study in the Adamaoua Province of Cameroon (Litvack and Bodart, 1993) found that the probability of the poorest quintile seeking care at public facilities increased after prices went up, and increased more rapidly than for the rest of the population. The availability of drugs, and the time and financial costs of seeking alternative care, were key factors encouraging use of public facilities.[28]

User fees can be progressive under the right circumstances,[29] but in most cases they have been found to discourage use by the poorest segments of the population. Policies for discriminatory pricing and for protecting the poor are clearly necessary in the context of widespread user fees for health services. The next section of this paper looks at different approaches to identifying and implementing such policies.

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25 McPake cites a study from Swaziland showing that "up to 34% of the overall decline in attendance (of all health services) was among patients who previously paid the least for health care" (p. 1401). A separate study in the Meru District of Kenya (Mwabu, Ainsworth, and Nyamete, 1993) found that the poor in the district use public facilities more than the rich -- and are therefore disproportionately affected by fee increases.

26 Waddington and Enyimayew, 1990, p. 295-300. Utilization also fell in urban areas but later returned to previous levels. Nationwide in Ghana, outpatient utilization fell from 4,468,482 in 1984 to 1,607,380 in 1985 and 2,051,501 in 1986.

27 Sauerborn, Nougtara, and Latimer, 1994. The authors conclude that the study "suggests that simply raising user fees in existing public health services would lead to serious inequity of access with negative public health effects" (p. 191).

28 Several other authors point to the importance of time as a cost (Diop *et al.*, 1994; Gilson *et al.*, forthcoming). If public services are perceived to be of high quality and are conveniently located, paying for them may be less disadvantageous than long trips to seek other sources of care.

29 As Abel-Smith and Rawal (1992, p. 331) observe, "If services are so bad that poor must resort to the private sector, user fees may be less inequitable than free care" -- and the introduction of fees may be justifiable if services are improved.

II. Types of Interventions to Reduce Inequities

A. Theoretical Framework and Definitions

Several terms appear repeatedly in the literature and provide a useful basis for analyzing social programs aimed at the poor:[30]

- *Incidence* is the percentage of program benefits which goes to members of the target population. Determination of incidence will depend on how the target population is calculated and whether the program beneficiaries are enumerated as individuals or as households. Targeted programs will have higher incidence than subsidies in terms of delivering benefits to the poor.

- *Coverage* refers to the proportion of the targeted population benefitting from a targeted program

- *Leakage* is the proportion of the benefits going to individuals outside the target group.

- *Participation rates* are proportions of the general population benefitting from a program.

- *Type I error* is the classification of a truly poor person as "non-poor." Type I error reduces coverage and is also called exclusion error.

- *Type II error* is the classification of a non-poor person as poor -- resulting in program leakage -- and is also called inclusion error.

  Types I and II error can be portrayed in a table format as seen at right. In designing targeted programs, policy makers typically face a trade-off between high coverage (low type I error) and low leakage (low type II error). Less strict criteria and enforcement will result in higher coverage; more strict criteria will result in less leakage but also lower coverage.

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[30] Definitions are from Willis (1993), pp. viii, 32-33; and Grosh (1994). p. 17-34.

- *Waivers* absolve a patient from paying fees and are typically granted on a one-time basis, generally informally, because of difficult conditions faced by the patient. *Exemptions* result from a more systematic mechanism for identifying those who should not pay, and absolve those who are exempt from specific fees over a period of time.

Table 3. Program Outcomes.

	Poor	Not Poor
Served	Success: correctly given benefits	Type II (inclusion) error
Not served	Type I (exclusion) error	Success: Correctly denied benefits

Source: Adapted from Grosh, 1994, p. 16 and Willis, 1993, p. 33.

B. General Approaches to Reducing Inequities

The World Bank's *Financing Health Services in Developing Countries* states that the following interventions can be used to promote equity:[31]

- Institute user charges, alone or in combination with:
  - -- using freed government revenues to expand cost-effective services;
  - -- using new revenues to finance non-salary costs; and
  - -- using differential charges to protect the poor and reduce existing subsidies for the rich.
- Provide for risk coverage.
- Use non-government resources effectively.[32]
- Decentralize government resources effectively.

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[31] Akin *et al.*, 1987, p. 7.

[32] *Better Health in Africa* stresses finding an appropriate balance between public and private financing for health services. Public financing should cover public goods with positive externalities, such as health education, and management costs at the national and district levels. The public sector should partially subsidize (covering 60-80% of costs) services which have positive externalities, and should subsidize at a lower level (40-50%) district hospital care. To finance these subsidies, public funds should be reallocated from cities to rural areas and from tertiary hospitals to lower levels of care. World Bank, 1993b, pp. 137 and 149.

Better Health in Africa suggests that, if utilization is deterred by fees, governments should ensure access through subsidies, waivers, and sliding fee systems.[33] The 1993 *World Development Report* identifies four mechanisms for targeting an essential package of services to the poor: (1) individual assessment of income, nutritional status, or assets; (2) targeting easily identifiable subgroups, such as those living in poor geographic regions; (3) self-targeting, and (4) targeting services that are used disproportionately by the poor.

Which of these types of interventions have been shown to work, and what are the conditions necessary for success? The following sections of this paper seek to answer these questions, beginning with descriptions of non-targeted and targeted interventions, and moving to specific examples from sub-Saharan Africa and other developing regions.

C. Non-Targeted Approaches

General price subsidies have few informational requirements and no targeting costs. In terms of reaching the poor, they generally have high leakage and poor incidence as no attempt is made to target or discriminate among beneficiaries of services. As stated above, general subsidies have lower incidence than targeted programs in terms of delivering benefits to the poor. But there are strong arguments for subsidizing goods and services with positive externalities ("public goods" -- see description above). Given the levels of poverty in most sub-Saharan African countries, partial subsidization of a package of basic health services remains a recommended policy option.[34]

Other types of non-targeted approaches can increase equity. The equity effects of user fees, and the circumstances under which fees can have a positive effect on equity, are discussed above in Section I.C. Additionally, increased allocative and technical efficiency within a health system can improve equity by freeing up financial resources used to benefit the poor.[35]

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33 World Bank, 1993b, p. 149.

34 *Better Health in Africa* provides a detailed breakdown of proposed partial subsidies (World Bank, 1993b, p. 129). de Ferranti (1985) recommends a general subsidization of a basic package of (generally preventive) health services. He proposes that non-patient related preventive care (including disease control, sanitation, health education, and monitoring of disease patterns) should be free or have a negative cost.

35 For example, considerable gains in technical efficiency are possible in the performance of drug selection, procurement, distribution, and prescription. *Better Health in Africa* states that "Inefficiencies and waste appear to be sufficiently widespread in many African countries that patients of public health facilities may be effectively using only $12 worth of quality drugs for each $100 of tax money spent" (World Bank, 1993b, p. 69).

To improve allocative efficiency, pricing and resource allocation policies should be coordinated to support quality in first contact facilities and appropriate use of the provider network.[36] To achieve this end, governments should reallocate recurrent funding from large tertiary hospitals to health centers and dispensaries. The top priority for resource allocation is to improve and maintain the quality of care in facilities designed to be the point of first contact between the population and the health system -- generally the health center.

Risk-sharing represents an additional policy option for promoting equity. By reducing the impact of seasonal variations in income, and other types of income fluctuation, risk-sharing and prepayment can improve access to health services.[37] In Costa Rica, about 12 percent of the population benefit from free affiliation with the national health insurance program.[38] However, the percentage of populations in sub-Saharan Africa currently covered by formal health insurance is small (see Table 4). Under present circumstances, it is unlikely that private health insurance will reach significant coverage levels.[39] Community-level risk-sharing schemes are more promising for promoting equity in rural areas -- and rural prepayment schemes are drawing increasing attention as a means of financing and organizing health services within a district setting.

Table 4.
Percentage of the Population Covered by Health Insurance in Selected African Countries

Country and Year	Population (millions)	Percent Covered by Insurance
Burkina Faso, 1981	6.7	0.9
Burundi, 1986	4.9	1.4
Kenya, 1985	21.2	11.4
Mali, 1986	7.6	3.3
Nigeria, 1986	103.1	0.04
Senegal, 1991	7.2	13.0
Uganda, 1991	16.8	0.0
Zambia, 1981	5.6	6.1
Zimbabwe, 1987	8.7	4.6

Source: Reprinted from World Bank, 1993b, p. 152.

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36 Differentiated pricing policies to encourage appropriate use of the referral system can be coordinated with targeted exemption mechanisms to ensure that the exemptions themselves to not undermine rational use of the health system.

37 A review of Bamako Initiative experiences in five countries found that, in all five countries, surveys indicated that the seasonality of income was an important constraint of utilization on services (McPake, Hanson, and Mills, 1992, p. 27).

38 Grosh, 1994, p. 76. The health insurance system has formalized documentation requirements, which work well given Costa Rica's high literacy rates).

39 Korte *et al.*, 1992, strongly encourage the development of decentralized risk sharing schemes in Africa to promote equity and sustainability of health services.

By collecting a contribution when cash incomes are highest, risk-sharing schemes can guarantee financial access even during seasons when much of the rural population is cash poor. For example, a village-level prepayment scheme for drugs and basic services in Guinea-Bissau is funded through annual collections made shortly after the harvest, when cash is readily available in the village. Similarly, in Zaire's Bwamanda health zone, annual collections for a prepayment scheme for hospital services are made during the season when cash incomes are highest. The success of this approach is reflected in the enrollment rates achieved in these voluntary schemes -- 75 percent of the adult population in the villages studied in Guinea-Bissau, and 60 percent of the population in Bwamanda.[40]

D. Targeted Programs

Targeting "refers specifically to the identification of those who will or will not be eligible for a social program."[41] A wide variety of criteria are used to identify individuals or households who are eligible to participate in (or who are exempt from) a specific targeted program. Examples of criteria include income, various income proxies, occupation, demographic group, health condition, and age. Results from an international survey of cost recovery practices show that 18 of the 26 countries which responded to the survey have exemption policies to mitigate the effect of health costs on the poor. Of these 18, only two countries use income criteria for identification.[42]

1. Direct vs. Characteristic Targeting. Direct targeting seeks to identify specific individuals or households according to their income status -- poor or non-poor, able to pay or unable to pay. Direct targeting typically uses income, or income proxies, as criteria for identification (discussed in the section on means testing, below). Characteristic targeting "provides benefits to all people with a given characteristic; for example, anyone of a certain

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[40] The relatively high enrollment rate in Bwamanda can be attributed to a number of factors. First, and perhaps most importantly, most of the population believed the scheme provides access to good quality health services. Second, high fees were charged at the hospital, so there is real financial risk associated with an illness requiring hospitalization. Third, the premium was affordable to most of the population. The revenues from premiums and copayments directly financed the operating costs of the zone's health facilities. Even though the insurance plan does not cover health center care, the plan will only pay for hospital care if a beneficiary has been referred. The incentive for using the appropriate first contact facility is thus built directly into its reimbursement rules. Examples of risk sharing schemes are from Chabot, Boal, and da Silva, 1991, p.48 (Guinea-Bissau), and Shepard, Vian, and Kleinau, 1990 (Zaire), in Kutzin and Waters, 1993, p. 24-25.

[41] Grosh, 1994, p. 7.

[42] Gilson *et al.*, forthcoming, p. 14.

age, with a certain health condition, or living in a given geographical area."[43] Direct targeting is generally more accurate in terms of identifying the poor, with less leakage to the non-poor, but also requires more information to administer[44] and is therefore likely to be more costly.

An example of characteristic targeting discussed in the literature is targeting by region. Gertler and van der Gaag (1990, p. 121) suggest that, since identifying individual income is difficult, "a useful alternative would be to charge lower prices in low income regions." Geographic targeting works best when populations within regions are homogeneous, and the prevalence of poverty is widespread in the targeted regions.[45] Grosh (1994, p. 110) states that geographic targeting can be inaccurate but works well for small local programs with intensive community contact. A study from Indonesia concludes that geographic targeting is administratively simple but is "no panacea" for poverty, and that gains to the poor may be quite small.[46]

Targeting by nutritional status is a type of characteristic targeting used successfully in Latin America. Grosh (1994) states that criteria based on nutritional status or risk produce good incidence. Programs targeted by nutritional status and linked to health services mean extra work for health staff, but provide an incentive for the poor to seek preventive health care, allowing "a synergy of benefits among health services, health education, and food or income supplements."[47] Pfeffermann and Griffin (1989, p. 26) discuss examples of such programs in Chile and Costa Rica, concluding that nutritional targeting is highly cost-effective in comparison with general subsidies.

2. Means Testing. Willis (1993, p. 40) defines means testing: "In the context of health care cost recovery, it is the mechanism by which indigent patients are identified and exempted (partially or wholly) from paying for health services, thereby removing or lowering price barriers, increasing access of the poor to health services, and improving the equitability

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43 Russell and Gilson, forthcoming, p. 49. Glewwe and van der Gaag (1988) provide similar definitions.

44 Russell and Gilson, forthcoming, p. 58.

45 Levine *et al.*, 1992, pp. 9-10, give examples from Brazil and the Philippines.

46 Ravallion, 1993. In Indonesia, the maximum impact on national poverty from lump-sum regional distributions across provinces is no more than the impact of a uniform (untargeted) transfer to all persons equivalent to 4% of mean consumption. A similar study from India (Datt and Ravallion, 1994) shows that such a regional redistribution would be equivalent to a uniform transfer to all persons equal to only 1.5% of mean consumption. For greater impact on equity, it would be necessary to target the poor *within* regions.

47 Grosh, 1994, p. 92.

of the health system. Means tests can be based on income, income proxies, or a combination of the two."

Grosh (1994, p. 83) distinguishes between "true means tests" -- based only on income and wealth -- and proxy means tests or social worker evaluations.[48] She suggests that proxy means tests represent "a viable alternative to a straight income test when program administrators believe that incomes will be misrepresented or are difficult to compute because of irregular or in-kind earnings," a situation which is common in the developing world and particularly in sub-Saharan Africa. Examples of criteria used as substitutes for income in proxy means tests include property, location, family, and housing. In Latin America, means tests have greater variability in incidence, and in costs, than other types of targeted programs.[49]

Inherent in the design of means testing and other types of targeting is a trade-off between Type I error (error of exclusion) and Type II error (error of inclusion). Additionally, a trade-off exists between the accuracy of the targeting and the cost of administering the test. In order to be both effective and efficient, targeting must be accurate without a cost which is disproportionate to the service being provided. As reflected in Table 5on the next page, means tests (direct targeting) typically will result in less leakage and higher coverage than other types of targeting. But they require more detailed information -- and have higher administrative costs.

3. Self-Targeting. Self-targeting is an important targeting option which gives individuals the choice of accepting a service or participating in a program, if they are willing to pay non-monetary costs. These costs can be lost time (such as waiting in line), limitations on quantity of a product received, psychological costs, or social stigma attached to the services or program.[50] Additionally, services differentiated simultaneously by quality and cost are often self-targeting. The poor are willing to accept lower quality services which the rich are

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[48] Proxy means tests generally use computers and require appropriate training and equipment. Social worker evaluations are more informal, and more subjective.

[49] Grosh, 1992. In Latin American means testing programs, from 59 to 83 percent of benefits went to the poorest two quintiles, with a median of 74 percent.

[50] Levine *et al.*, 1992, p. 13: Pfeffermann and Griffin, 1989, p. 7; Grosh, 1994, pp. 111-130. An example of stigma as a cost comes from the food stamps program in the United States, where using food stamps at a check-out counter can result in embarrassment for the user.

Table 5. The Trade-Off Between Accuracy and Informational Requirements.

	Inaccurate, Low Informational Requirements ←		→ Accurate High Informational Requirements	
	General Price Subsidies	Characteristic Targeting	Proxy-Based Direct Targeting	Income-Based Direct Targeting
Type I Error	low to high	medium	medium	low
Type II Error	high	medium	medium	low

Source: Reprinted from Willis, 1993, p. 35.

not, and the rich may be willing to pay for amenities which the poor cannot afford. Grosh (1994, p. 129) states that self-targeting mechanisms in Latin America have good incidence when tied to the public health systems -- but are also more appropriate for programs with relatively small benefits.

E. Cross-Sectoral Targeting

In many developing countries, households face user charges for a variety of basic social services. Ideally, the same means testing method could be used to determine fee exemptions for different services, including health, education, and water and electricity supply -- thereby avoiding costly duplication of time and funds spent to implement programs. In such cases, administering a prospective means test would logically not be the responsibility of Ministries of Health, but rather of a government agency with appropriate staff and administrative resources.[51]

The literature provides examples of cross-sectoral targeting program, but little assessment of their success. Grosh (1994, p. 121) suggests that other programs can benefit from association with the public health system because of the relatively good incidence of basic public health services. Combining targeting for nutritional supplements and preventive health

[51] Kutzin and Waters, 1994, p. 28.

services encourages the poorest to obtain basic preventive health care. In Jamaica, individuals identified by local government authorities as qualifying for nutritional assistance are recognized by MOH facilities as qualifying for free treatment.[52] However, such a combination increases, instead of lessening, the workload of health personnel.[53]

In Chile, a social stratification survey (Ficha CAS, for Caracterizacion Socio Economica) is used to determine eligibility for several social programs, including two cash transfer programs and allocation of housing and water subsidies. Social workers visiting households in low-income areas use the survey to identify the poor, who subsequently use a card to demonstrate their eligibility for different services. A small unit in the Ministry of Planning oversees the Ficha CAS. An initial evaluation found that the survey did not provide sufficient information needed for administering social programs, and was to open to manipulation or bribery by the respondents. Since 1987, the survey form has been made more comprehensive.[54]

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[52] Kutzin and Waters, 1994, p. 28.

[53] In Honduras, where a food stamp program is linked to the public health system, health workers complain that they spend so much time on the this program and its recipients that other important activities, including tuberculosis programs, suffer (Grosh, 1994, p.122).

[54] Grosh, 1994. p. 81; Levine *et al.*, 1992, p. 5; Pfeffermann and Griffin, 1989, p. 5. Another example comes from Kenya, where the Ministry of Culture and Social Services administers a program combining benefits for vulnerable groups including the poor, widows, orphans, and the elderly. Benefits include cash transfers to pay for school fees, vocational training, home improvement, and care for orphans and the elderly. Social workers and local leaders investigate the backgrounds of households applying for assistance; a district committee determines which households are eligible (Huber *et al.*, 1989, as described in Willis, 1993, p. 57).

III. Targeted Interventions in Practice

This section provides an overview of targeted interventions in practice, and is primarily concerned with program characteristics which are pertinent for the design and evaluation of targeted interventions in sub-Saharan Africa. This section does not provide a comprehensive description or inventory of the many targeted programs discussed in available literature. Several authors have provided more comprehensive reviews of means tests and targeted social programs in developing countries.[55]

A. Developing vs. Developed Countries

In developing countries, despite government commitments to the provision of universal public health care, problems of equity in health care are generally more severe than in the industrialized world.[56] Targeting can be problematic in countries where a high percentage of the population is poor. In these countries even untargeted programs will have relatively low leakage with less administrative cost. A lack of institutional capacity in very poor countries limits capacity to administrate targeted programs. However, Grosh (1994, p. 53-54) found that "the administrative costs of means-tested welfare programs in the United States as a proportion of total costs are similar to those for the Latin American programs -- from 4.0 to 16 percent." She concludes that "targeting can still be useful in moderately poor countries with weak administrative capacities" (p. 53).

In comparing targeted social programs in the United States and in developing countries, Levine *et al.*, 1992, suggest that developing countries have several characteristics which call for innovative approaches in designing such programs:

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[55] For example, the following authors and reviews:
- Barnum and Kutzin, 1993, pp. 221-229 -- exemption policies in hospital settings in 18 low and middle income countries.
- Gilson, 1988 -- 29 studies of health care utilization, demand and expenditure; 4 studies of health care financing.
- Grosh, 1994 -- 23 case studies and 7 programs from other sources, all in Latin America.
- Levine *et al.*, 1992 -- a survey of 48 projects, distributed evenly across developing regions.
- Pfeffermann, and Griffin, 1989 -- targeted nutrition and health programs in Latin America.
- Willis, 1993 -- 56 targeted projects in developing countries, the majority of them employing means tests.

[56] Baker and van der Gaag, 1993, point out that "even in the U.S., a country that relies more heavily on the private provision of health services and on private financing than any other developed country, medical care use is fairly equally distributed across the income distribution."

- A large proportion of the population outside of the formal market economy.
- Non-availability of wage information. In economies which are not highly monetized, proxy means tests may be more appropriate than true means tests.
- Limited administrative, communication, and banking infrastructure.
- A high correlation between rural residence and poverty.
- Extreme poverty among the poorest people, requiring a focus on absolute poverty in addition to efforts to alleviate relative poverty differences.

B. Examples of Targeted Programs from Latin America and Asia

Experiences from Latin America demonstrate success in targeting in the absence of detailed statistics and precise identification of the poor. Targeted programs based on nutritional status have proved more effective and efficient than general price subsidies for food.[57] Latin America faces severe gaps in wealth between rich and poor.[58] In contrast with Africa, however, social security coverage in Latin American countries has generally been significant (see Table 6), assisting with payment for basic health services.

A comprehensive review of targeted social programs in Latin America (Grosh, 1994) reaches the following conclusions:

Table 6.
Social Security Coverage in Six Latin American Countries, 1986.

Country	Percentage of Population Covered
Argentina	63
Brazil	83
Chile	61
Costa Rica	85
Dominican Republic	4
Mexico	56

Source: Pfeffermann and Griffin, 1989, p. 20.

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[57] Pfeffermann and Griffin (1989, p. 26) present examples from Chile and Costa Rica. Levine *et al.* (1992, p. 7) point out that Jamaica abandoned general food subsidies in 1984, instituting a targeted nutrition program which works well.

[58] In Latin American, households in the top quintile have only 8% of children and, on average, 90 times more resources available per child than do the poorest 40% of households (Pfeffermann and Griffin, 1989, p. 6).

1. Targeted programs have much more progressive incidence than general food price subsidies and even somewhat more progressive incidence than basic public health and education services.

2. The administrative costs of programs with moderately good incidence need not be excessively high. Median total administrative costs as a share of total program costs were nine percent for individual assessment mechanisms, seven percent for geographic targeting and six percent for self-targeting. Concern about administrative costs has been greatly overstated.

3. It is not possible to rank targeting mechanisms a priori. There are no broad correlations between targeting mechanisms and targeting outcomes, and there is only a weak correlation with administrative costs.[59]

Grosh also concludes that, in Latin America, poverty and lack of administrative capacity are not necessarily barriers to achieving successful targeted programs. She adds that "if administrative barriers are substantially greater in sub-Saharan Africa than in Latin America, the choices about targeting may reasonably be different as well" (p. 53-54).

An example from Thailand demonstrates some of the complexities of administering targeted exemptions. In Thailand, the Free Medical Care Project enables those classified as poor to receive free treatment at government facilities. Prior to 1980, identification of the poor was left to the subjective determination of the staff and director of health units; eligibility for free care varied by region. Since 1981, criteria have been standardized and free medical cards issued to the poor, but leakage continued.[60] Potential difficulties with using cards include guaranteeing security (ensuring that use of the card is limited to the recipient); ensuring that the period of validity does not allow for significant changes in poverty status; defining dependents; and distributing cards efficiently in rural areas.[61]

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[59] Conclusions from Grosh, 1994, pp. 45, 55, 159.

[60] Mills, 1991, quotes a report that only 60% of free card-holders were poor, and 17% wealthy.

[61] Mills, 1991, p. 1,247.

C. In Sub-Saharan Africa

In general, targeted interventions in sub-Saharan Africa have been compromised by a variety of difficulties, including excessive leakage, overly subjective exemption criteria, informal identification and verification procedures, and excessive costs. Limitations in institutional and administrative capacity underlie each of these problems. As a result, several countries are experimenting with community-level approaches to improving equity. Non-governmental health providers also generally provide waivers to the poor.

A commonly cited constraint on targeted programs in sub-Saharan Africa is Type II error -- over-exemption, or too many waivers -- limiting the revenue obtainable from fees. In the 1980s, Senegal initiated cost recovery and gave local communities discretion in setting fees and granting waivers. Government guidelines suggested waivers for the indigent, the handicapped, and for several categories of public sector employees. The net effect of a surplus of waivers was regressive.[62] Similarly, a survey of patients at Niger's central government hospital in Niamey found that the median income of patients who were not entitled to exemption from payment was less than the median for the entire sample of patients.[63]

Fee exemptions for civil servants resemble regressive characteristic targeting. Barnum and Kutzin (1993, p. 228) recommend that the provision of subsidized care to civil servants, if desired, be in the form of a direct intragovernmental transfer to the Ministry of Health or to hospitals. Excessive Type II error is also related to the nature of criteria employed for means tests, and the level of formality in administering the tests. National or regional criteria for exemptions should be clearly defined and well publicized.[64] Informal procedures for identification and verification of poverty status have consistently been a constraint on targeting in sub-Saharan Africa.[65]

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[62] Vogel, 1988; Willis, 1993, p. 61.

[63] Weaver *et al.*, 1990. Barnum and Kutzin 1993, pp. 226, provide additional examples from Mali and Ghana. The problem of excessive exemptions is certainly not limited to Africa, however. A 1988 World Bank study found that hospitals outside the Manila region in the Philippines classified more than 70 percent of patients in 60 district hospitals as indigent -- a rate thought to be substantially higher than the real rates of poverty (Levine *et al.*, 1989, pp. 8-9).

[64] Barnum and Kutzin, p. 228; Willis, 1993, p. 45.

[65] Two examples are from Senegal (Vogel, 1988), and South Nyanza, Kenya (Willis, 1993, p. 62).

A related issue is responsibility for identification and verification of poverty status. If health workers conduct means tests, the process may well be biased, with pressures placed on the health workers to grant exemptions or waivers. In Niger, personnel working in facilities about to start cost recovery expressed a strong desire not to be involved in conducting means tests.[66] Barnum and Kutzin, 1993, p. 227, state that "means testing at the point of service is likely to be less accurate than a formal, prospective means test" and places a greater burden on staff.[67]

Institutional and administrative limitations often undermine targeted programs; institutional weaknesses require that means tests be locally administered and informal. In 1980, Zimbabwe established a cutoff of Z$150 annual income for hospital and health clinic fee exemptions, but then failed to revise this level despite inflation in the 1980s.[68] At Kenyatta National Hospital in Kenya, inflation-induced erosion of prices for services resulted in the labor cost of social workers administering a means test being higher than revenue received by conducting the test.[69]

Community-level financing and exemption mechanisms are strongly recommended for both sustainability and equity in the health sector in sub-Saharan Africa.[70] Unfortunately, a review of five case studies of Bamako Initiative programs found that protection mechanisms "have an extremely limited scope (as in Nigeria, Burundi, and Kenya), appear ineffective in practice (Uganda) or do not exist (Guinea)."[71] In Malawi, however, community involvement in the administration of a proxy means test based on land ownership has played an important and positive role in the operation of the program.[72]

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66 Willis, 1993, p. 45.

67 Barnum and Kutzin, 1993, p. 227, provide examples of prospective means tests for hospital fee exemptions in Korea and Jamaica. The Ficha CAS program in Chile is another example. Levine *et al.* (1993, p. 16) state that "it is expected that centralized means testing will have good coverage, lower leakage, and higher administrative cost than local means testing. Centralized systems probably have higher fixed costs, as well. Local testing may provide better coverage because it is closer to the community."

68 Barnum and Kutzin, 1993, p. 228; World Bank, 1992; Willis, 1993, p. 61. A non-African example comes from a means test in Belize -- fees and income categories were not updated in over 25 years (Willis, 1993, p. 58).

69 Levine *et al.*, p. 16.

70 Korte *et al.*, p. 8; UNICEF, 1988.

71 McPake *et al.*, 1992, p.35.

72 World Bank, 1993b, p. 150. The program is a national effort to protect the "core poor" from the effects of cost recovery at hospitals and health centers. There is not a consensus among authors concerning the value of community involvement in means test decisions -- such involvement is seen either as beneficial (because the community knows best who is poor) or harmful (because decisions are subject to personal bias and manipulation).

Non-governmental organizations provide a significant portion of health services in sub-Saharan Africa.[73] NGOs charge for drugs and services, but commonly provide informal waivers to the poor. In non-government facilities in South Nyanza in Kenya, the most common approach is to verify a family's inability to pay through local officials or religious figures.[74] A study of 42 randomly selected hospitals and dispensaries in Tanzania found that 95 percent of the facilities had a policy of waivers or reduced fees -- for (to varying degrees) the poor, the disabled, children, and those with chronic diseases.[75]

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[73] The private, not-for-profit sector accounts for 40% to 50% of all hospital beds in Malawi, Senegal, Tanzania and Zimbabwe (Data for Decision Making Project, 1994). The World Bank estimates that NGOs provide a third or more of all clinical care in Cameroon, Ghana, Malawi, Uganda and Zambia (World Bank, 1993a, p. 127).

[74] Huber *et al.*, 1989, in Willis, p. 63.

[75] Mujinja and Mabala, 1992.

IV. Lessons Learned

The following are lessons learned concerning equity in the health sector in developing countries in general, and in Sub-Saharan Africa in particular.

(1) Access to and utilization of health services are inequitable throughout the developing world, and the inequities are particularly glaring in sub-Saharan Africa. Approximately half of the region's population does not have regular access to modern medical facilities.

(2) Important concepts underlying equity in health care include expenditure, distribution of resources, access, utilization, and health status. Measurements of equity should account for the extent to which resources allocated match differing needs.

(3) In the absence of improved quality of care, user fees generally have a negative effect on equity. Fees can be progressive under the right circumstances -- if the revenue generated from the fees is retained and used by the charging facilities, and if quality of care improves as a result. However, a wide range of studies have found that price increases lower utilization by the poor more than utilization by the rich. Policies for discriminatory pricing and for protecting the poor are clearly necessary in the context of widespread user fees for health services.

(4) Non-targeted approaches to promote equity include general subsidization of health care, risk-sharing, and improvements in allocative and technical efficiency in health systems. Untargeted subsidies are common in sub-Saharan Africa, and remain a recommended policy option for a range of preventive services with positive externalities. Formal health insurance covers only a small percentage of African populations; the development of operable risk-sharing schemes is a priority.

(5) Concerning targeted programs:

(a) In poor countries, targeted programs can have good incidence. Extreme poverty among the poorest people requires a focus on absolute poverty in addition to efforts to alleviate relative poverty differences.

(b) Characteristic targeting by nutritional status has proven to be effective in Latin America. Such targeting has also generally been considerably more efficient than general food subsidies. Combining targeting for nutritional supplements and preventive health services encourages the poorest to obtain basic preventive health care.

(c) There do not appear to be well-defined correlations between types of targeting mechanisms and outcomes, and the correlation between mechanisms and administrative costs is weak. Successful experiences in means testing appear to depend on multiple criteria, with one of the criteria being a direct measurement of income.

(d) Inherent in the design of means testing and other types of targeting is a trade-off between Type I error (error of exclusion) and Type II error (error of inclusion). Successful targeting depends on both high coverage of the target population and low levels of leakage to non-eligible individuals. A commonly cited constraint on targeted programs in sub-Saharan Africa is Type II error -- over-exemption, or too many waivers -- limiting the revenue obtainable from fees.

(e) The administrative costs of targeting should be modest in comparison with both the revenues generated by the targeted program (when fees are involved) and the value of the benefits received by those targeted. Experience has shown that administrative costs of programs with moderately good incidence need not be excessively high.

(f) The physical location where the means test is conducted appears to affect targeting accuracy. Means-testing at the point of service is more likely to be informal, and less accurate, than centralized, prospective tests.

(6) Community-level programs for financing, risk-sharing, and targeting are strongly recommended for both sustainability and equity in the health sector in sub-Saharan Africa -- but there is little documented evidence to date of their effectiveness. NGOs also hold promise for promoting equity. Most NGOs in the health sector charge for drugs and services, but commonly provide informal waivers to the poor.

(7) In sub-Saharan Africa, a fundamental constraint on the success of targeted programs and other measures to promote equity has been limited administrative and institutional capacity. Large scale targeted programs are unlikely to succeed without investments in human resources and institutional strengthening.[76]

(8) Political support for measures to promote equity is also essential. In general, the poor have little political influence; there has often been a difference between policies for equity and action. In developing policy, it is important to recognize the political, social, and cultural factors which are likely to influence both the policy and its outcomes.[77]

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[76] Gilson *et al.*, forthcoming, p. 20, discuss the importance of administrative and institutional capacity.

[77] Russell and Gilson, forthcoming, p. 59; Gilson, *et al.*, forthcoming, p. 11.

APPENDIX 1

Appendix 1. Characteristics of Successful Means-Testing -- a Review of 48 Programs

From her review of 48 means-tested programs, Willis (1993) provides a general summary of characteristics most indicative of program success. That summary is reproduced as Table 7 below. Characteristics most correlated with success are: formality, administration away from the health facility (or store), periodic rather than open-ended exemption periods, and appropriate verification procedures. Each of these observations fits closely with the examples described in this literature review.

Table 7. Characteristics of Means-Tested Programs Surveyed.

Characteristic	All 48 Programs	Nine Successful Programs	20 Unsuccessful Programs
Region			
Latin America	22	8	6
Asia	11	-	6
Africa	16	1	8
Additional Targeting Mechanism			
Characteristic	24	7	12
Self-Selection	30	5	16
Criteria			
Income	25	5	11
Proxy	12	2	3
Formality			
Formal	22	7	4
Informal	15	1	10
Administration			
Facility/Store	22	2	15
Local	18	6	2
Central	12	4	1
Period of Exemption			
Indefinite	14	-	12
Periodic	8	5	1
Verification			
Home visits	10	6	1
Data sharing between social services	10	5	1
Wages or tax records	3	1	-

Source: Reprinted from Willis, 1993, p. 65.

APPENDIX 2

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